

6700 Series Thermostats

6700 P.C. Board Thermostat



The Airpax Series 6700 is a miniature bimetallic snap acting thermostat which provides accurate and reliable sensing and switching in a single device. Primarily developed for thermal management applications on power supplies, the Series 6700 is also ideally suited for use on crowded P.C. boards. It provides fast, positive response and excellent repeatability with 1 amp switching capability at 48 VDC over its operating temperature range of 40°C to 110°C (104°F to 230°F). The operating temperature is pre-set at the factory and is non-adjustable in the field.

The single pole/single throw switch assembly features a bimetallic element that is rated 100,000 cycles at 5 VDC 20 mA resistive or in excess of 1,000,000 operations mechanically. This unit features a positive snap action, available in either normally closed, open on rising temperature or normally open, close on rising temperature.

The 6700 thermostat dimensionally conforms to the international product package standard Y220/T0220. Thus, the 6700 may be automatically placed and soldered onto P.C. boards with high speed automated equipment, eliminating the need for the expensive hand placement and termination required today for most power supply thermostats.

The nickel-plated copper mounting bracket allows this device to be directly mounted to the heat sink to

sense an over-temperature condition caused by other components mounted close by or insufficient cooling due to external conditions.

Typical uses include turning on an indicator light, sounding an audible alarm, switching on a control circuit to send a message to a display screen or even switching a circuit to shut down a system. Applications include computers and computer peripherals, aircraft, automotive, and test equipment.

Specifications:

Contact Resistance: 50 Milliohms max. (before and after rated life)

Contact Ratings:

Cycles	Voltage	Amps (Resistive)
30,000	48 VDC	1
30,000	120 VAC	1
100,000	5 VDC	.020
100,000	5 VDC	.001

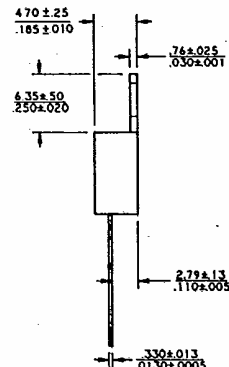
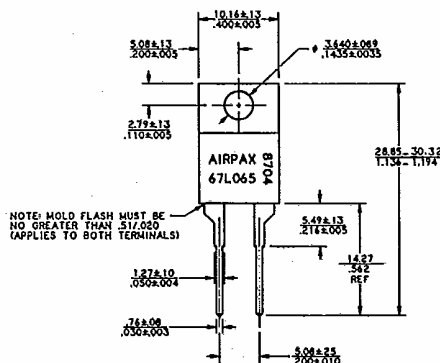
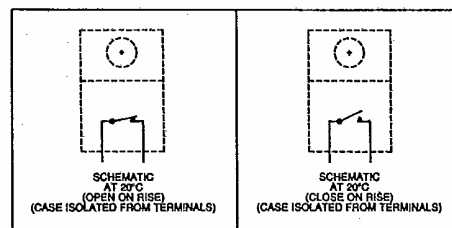
Contact Operations: Either open on rise or close on rise

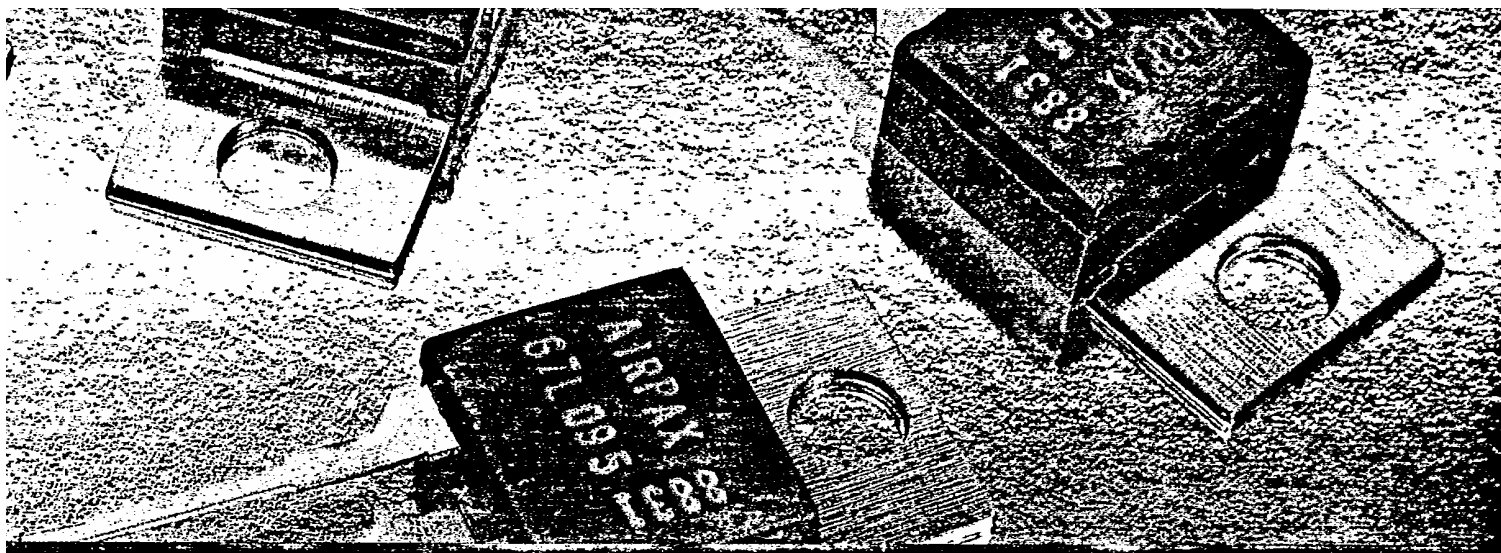
Operating Temperature Range: 40°C (104°F) to 110°C (230°F)

Standard Operating Temperature

Tolerance: ±5°C (±9°F) Nominal operating temperature settings in 5°C (9°F) increments

US Patent No: 4,795,997





6700 Series Thermostats

Short Term Exposure Limit:

260°C (500°F), 10 sec.

Long Term Exposure Limit:

-55°C (-67°F) to 160°C (320°F)

Dielectric Strength: 1480 VAC 60 Hz,
1 second terminals to case

Insulation Resistance: 100 Megohms
at 500 VDC

Contact Bounce - make: 3 ms max.

Weight: Approximately 0.5 grams

Seal: Epoxy sealed for wave soldering
and cleaning. Moisture proof per Airpax
Spec. S-722 (unit will not leak while
submerged in 9" of water for a minimum
of two minutes).

Vibration: Per Mil-Std-202,
Method 204D, Test Condition D,
10-2,000 Hz.

Shock: Per Mil-Std-202, Method 213,
Test Condition C, 100 G's, 6 milliseconds,
½ sine wave.

Humidity: Moisture resistant per
Mil-Std-202F, Method 106E.

Chemical Resistance: Unit is resistant
to water, salt, alcohol, ammonia,
trichlorethane, and most other organic
solvents.

Solderability: Terminal material is
selectively striped with 60/40 solder for
improved solderability.

Resistance to Soldering Heat:

Per Mil-Std-202F, Method 210A,
Test Condition E.

Mechanical Life: 1,000,000 operations.

UL & CSA File Numbers:

UL Recognized E36687

CSA Certified LR25561

Materials:

Seal: High temperature epoxy

Base: PPS (Polyphenylene Sulfide),
94 VO rated

Terminals: 65% Copper, 18% Nickel

Contacts: Gold-plated Silver cross bar

Bracket: Nickel-plated copper

6700 SERIES STANDARD CALIBRATIONS

OPERATE (±5°C)	RESET (MIN °C)	DIFFERENTIAL (MIN °C)
40	20	4
45	20	4
50	30	4
55	30	4
60	40	4
65	40	4
70	50	4
75	50	4
80	55	6
85	55	6
90	60	6
95	60	6
100	70	6
105	70	6
110	80	6

How to use this chart

Each thermostat Part Number consists of functional "building blocks" to enable the user to specify clearly and precisely the desired characteristics in each category. Select the proper Code in each category, then transfer it to the box indicated. Unless a special requirement is indicated, the Part Number will be complete when the proper temperature is selected. If you have a special requirement, please call Airpax for a factory assigned number to complete the Part Number.

Example: A 67F060 thermostat will close (make contact) on a rising temperature from 55°C to 65°C and will reset (break contact) on a falling temperature no less than 4°C lower than the actual close temperature and no lower than 40°C actual temperature.

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Contact Operation: _____

F = Fan (CLR)
L = Limit (OPR)

Operating Temperature _____
in Degrees C.

Factory Assigned _____
Number for Special
Requirements

Temperature set point calibration is checked at Airpax with precision test equipment and proven methods. Because customer checking methods may differ, a typical variance allowed for correlation is ±1 degree C.

TEMPERATURE CONVERSION TABLE

If center column value is °F, the °C equivalent is to the left. If center column value is °C, the °F equivalent is to the right.

°C.	°F.	°C.	°F.	°C.	°F.	°C.	°F.	°C.	°F.	°C.	°F.	°C.	°F.	
-34.4	-30	-22	15.56	60	140	65.56	150	302	115.56	240	464	165.56	330	626
-33.89	-29	-20.2	16.11	61	141.8	66.11	151	303.8	116.11	241	465.8	166.11	331	627.8
-33.33	-28	-19.4	16.67	62	142.8	66.67	152	304.8	116.67	242	466.8	166.67	332	628.8
-32.78	-27	-18.6	17.22	63	143.8	67.22	153	305.8	117.22	243	467.8	167.22	333	629.8
-32.22	-26	-17.8	17.78	64	144.8	67.78	154	306.8	117.78	244	468.8	167.78	334	630.8
-31.67	-25	-17	18.33	65	145.8	68.33	155	307.8	118.33	245	469.8	168.33	335	631.8
-31.11	-24	-16.2	18.89	66	146.8	68.89	156	308.8	118.89	246	470.8	168.89	336	632.8
-30.56	-23	-15.4	19.44	67	147.8	69.44	157	309.8	119.44	247	471.8	169.44	337	633.8
-30	-22	-14.6	19.99	68	148.8	69.99	158	310.8	119.99	248	472.8	169.99	338	634.8
-29.44	-21	-13.8	20.56	69	149.8	70.56	159	311.8	120.56	249	473.8	170.56	339	635.8
-28.89	-20	-13	21.11	70	150.8	71.11	160	312.8	121.11	250	474.8	171.11	340	636.8
-28.33	-19	-12.2	21.67	71	151.8	71.67	161	313.8	121.67	251	475.8	171.67	341	637.8
-27.78	-18	-11.4	22.22	72	152.8	72.22	162	314.8	122.22	252	476.8	172.22	342	638.8
-27.22	-17	-10.6	22.78	73	153.8	72.78	163	315.8	122.78	253	477.8	172.78	343	639.8
-26.67	-16	-9.8	23.33	74	154.8	73.33	164	316.8	123.33	254	478.8	173.33	344	640.8
-26.11	-15	-9	23.89	75	155.8	73.89	165	317.8	123.89	255	479.8	173.89	345	641.8
-25.56	-14	-8.2	24.44	76	156.8	74.44	166	318.8	124.44	256	480.8	174.44	346	642.8
-25	-13	-7.4	24.99	77	157.8	74.99	167	319.8	124.99	257	481.8	174.99	347	643.8
-24.44	-12	-6.6	25.56	78	158.8	75.56	168	320.8	125.56	258	482.8	175.56	348	644.8
-23.89	-11	-5.8	26.11	79	159.8	76.11	169	321.8	126.11	259	483.8	176.11	349	645.8
-23.33	-10	-5	26.67	80	160.8	76.67	170	322.8	126.67	260	484.8	176.67	350	646.8
-22.78	-9	-4.2	27.22	81	161.8	77.22	171	323.8	127.22	261	485.8	177.22	351	647.8
-22.22	-8	-3.4	27.78	82	162.8	77.78	172	324.8	127.78	262	486.8	177.78	352	648.8
-21.67	-7	-2.6	28.33	83	163.8	78.33	173	325.8	128.33	263	487.8	178.33	353	649.8
-21.11	-6	-1.8	28.89	84	164.8	78.89	174	326.8	128.89	264	488.8	178.89	354	650.8
-20.56	-5	-1	29.44	85	165.8	79.44	175	327.8	129.44	265	489.8	179.44	355	651.8
-20	-4	-0.2	29.99	86	166.8	79.99	176	328.8	129.99	266	490.8	179.99	356	652.8
-19.44	-3	0.6	30.56	87	167.8	80.56	177	329.8	130.56	267	491.8	180.56	357	653.8
-18.89	-2	1.4	31.11	88	168.8	81.11	178	330.8	131.11	268	492.8	181.11	358	654.8
-18.33	-1	2.2	31.67	89	169.8	81.67	179	331.8	131.67	269	493.8	181.67	359	655.8
-17.78	0	3	32.22	90	170.8	82.22	180	332.8	132.22	270	494.8	182.22	360	656.8
-17.22	1	3.8	32.78	91	171.8	82.78	181	333.8	132.78	271	495.8	182.78	361	657.8
-16.67	2	4.6	33.33	92	172.8	83.33	182	334.8	133.33	272	496.8	183.33	362	658.8
-16.11	3	5.4	33.89	93	173.8	83.89	183	335.8	133.89	273	497.8	183.89	363	659.8
-15.56	4	6.2	34.44	94	174.8	84.44	184	336.8	134.44	274	498.8	184.44	364	660.8
-15	5	7	34.99	95	175.8	84.99	185	337.8	134.99	275	499.8	184.99	365	661.8
-14.44	6	7.8	35.56	96	176.8	85.56	186	338.8	135.56	276	500.8	185.56	366	662.8
-13.89	7	8.6	36.11	97	177.8	86.11	187	339.8	136.11	277	501.8	186.11	367	663.8
-13.33	8	9.4	36.67	98	178.8	86.67	188	340.8	136.67	278	502.8	186.67	368	664.8
-12.78	9	10.2	37.22	99	179.8	87.22	189	341.8	137.22	279	503.8	187.22	369	665.8
-12.22	10	11	37.78	100	180.8	87.78	190	342.8	137.78	280	504.8	187.78	370	666.8
-11.67	11	11.8	38.33	101	181.8	88.33	191	343.8	138.33	281	505.8	188.33	371	667.8
-11.11	12	12.6	38.89	102	182.8	88.89	192	344.8	138.89	282	506.8	188.89	372	668.8
-10.56	13	13.4	39.44	103	183.8	89.44	193	345.8	139.44	283	507.8	189.44	373	669.8
-10	14	14.2	39.99	104	184.8	89.99	194	346.8	139.99	284	508.8	189.99	374	670.8
-9.44	15	15	40.56	105	185.8	90.56	195	347.8	140.56	285	509.8	190.56	375	671.8
-8.89	16	15.8	41.11	106	186.8	91.11	196	348.8	141.11	286	510.8	191.11	376	672.8
-8.33	17	16.6	41.67	107	187.8	91.67	197	349.8	141.67	287	511.8	191.67	377	673.8
-7.78	18	17.4	42.22	108	188.8	92.22	198	350.8	142.22	288	512.8	192.22	378	674.8
-7.22	19	18.2	42.78	109	189.8	92.78	199	351.8	142.78	289	513.8	192.78	379	675.8
-6.67	20	19	43.33	110	190.8	93.33	200	352.8	143.33	290	514.8	193.33	380	676.8
-6.11	21	19.8	43.89	111	191.8	93.89	201	353.8	143.89	291	515.8	193.89	381	677.8
-5.56	22	20.6	44.44	112	192.8	94.44	202	354.8	144.44	292	516.8	194.44	382	678.8
-5	23	21.4	44.99	113	193.8	94.99	203	355.8	144.99	293	517.8	194.99	383	679.8
-4.44	24	22.2	45.56	114	194.8	95.56	204	356.8	145.56	294	518.8	195.56	384	680.8
-3.89	25	23	46.11	115	195.8	96.11	205	357.8	146.11	295	519.8	196.11	385	681.8
-3.33	26	23.8	46.67	116	196.8	96.67	206	358.8	146.67	296	520.8	196.67	386	682.8
-2.78	27	24.6	47.22	117	197.8	97.22	207	359.8	147.22	297	521.8	197.22	387	683.8
-2.22	28	25.4	47.78	118	198.8	97.78	208	360.8	147.78	298	522.8	197.78	388	684.8
-1.67	29	26.2	48.33	119	199.8	98.33	209	361.8	148.33	299	523.8	198.33	389	685.8
-1.11	30	27	48.89	120	200.8	98.89	210	362.8	148.89	300	524.8	198.89	390	686.8
-0.56	31	27.8	49.44	121	201.8	99.44	211	363.8	149.44	301	525.8	199.44	391	687.8
0	32	28.6	50	122	202.8	100	212	364.8	149.99	302	526.8	199.99	392	688.8
0.56	33	29.4	50.56	123	203.8	100.56	213	365.8	150.56	303	527.8	200.56	393	689.8
1.11	34	30.2	51.11	124	204.8	101.11	214	366.8	151.11	304	528.8	201.11	394	690.8
1.67	35	31	51.67	125	205.8	101.67	215	367.8	151.67	305	529.8	201.67	395	691.8
2.22	36	31.8	52.22	126	206.8	102.22	216	368.8	152.22	306	530.8	202.22	396	692.8
2.78	37	32.6	52.78	127	207.8	102.78	217	369.8	152.78	307	531.8	202.78	397	693.8
3.33	38	33.4	53.33	128	208.8	103.33	218	370.8	153.33	308	532.8	203.33	398	694.8
3.89	39	34.2	53.89	129	209.8	103.89	219	371.8	153.89	309	533.8	203.89	399	695.8
4.44	40	35	54.44	130	210.8	104.44	220	372.8	154.44	310	534.8	204.44	400	696.8
5	41	35.8	54.99	131	211.8	104.99	221	373.8	154.99	311	535.8	204.99	401	697.8
5.56	42	36.6	55.56	132	212.8	105.56	222	374.8	155.56	312	536.8	205.56	402	698.8
6.11	43	37.4	56.11	133	213.8	106.11	223	375.8	156.11	313	537.8	206.11	403	699.8
6.67	44	38.2	56.67	134	214.8	106.67	224	376.8	156.67	314	538.8	206.67	404	700.8
7.22	45	39	57.22	135	215.8	107.22	225	377.8	157.22	315	539.8	207.22	405	701.8
7.78	46	39.8	57.78	136	216.8	107.78	226	378.8	157.78	316	540.8	207.78	406	702.8
8.33	47	40.6	58.33	137	217.8	108.33	227	379.8	158.33	317	541.8	208.33	407	703.8
8.89	48	41.4	58.89	138	218.8	108.89	228	380.8	158.89	318	542.8	208.89	408	704.8
9.44	49	42.2	59.44	139	219.8	109.44	229	381.8	159.44	319	543.8	209.44	409	705.8
10	50	43	60	140	220.8	110	230	382.8	160	320	544.8	210	410	770
10.56	51	43.8	60.56	141	221.8	110.56	231	383.8	160.56	321	545.8	210.56	411	771
11.11	52	44.6	61.11	142	222.8	111.11	232	384.8	161.11	322	546.8	211.11	412	772
11.67	53	45.4	61.67	143	223.8	111.67	233	385.8	161.67	323	547.8	211.67	413	773
12.22	54	46.2	62.22	144	224.8	112.22	234	386.8	162.22	324	548.8	212.22	414	774